

## Desert Ecosystem

### 1. Meaning

Desert is the sum of biotic and abiotic processes across all arid regions. Biotic and abiotic includes all kind of bacterial, animal and plant which are interacting with each for their survival in desert habitat, community and ecosystem. Some of factors affecting abiotic includes, soil, latitude, longitude and climate. Desert region is affected by multiple factors as mentioned and hence forces the ecosystem to adapt these changes. Mainly biotic processes include pants and animals and way of their interaction. Apart from different climates, some biotic processes still have capability to grow. In desert area plants are known as xerophytic which means that they can survive for long dry periods. They have the ability to close their pores during daytime in order to store water in leaves and stems. Some examples are barrel cactus, popcorn flower and Saguaro cactus.

### 2. Importance of Deserts

Desert is most important region for their climate which certainly remains dry which is caused by mountain ranges, rain-blocking and remoteness from moisture of oceans. Deserts currently occupying the one-fifth of land surface of the Earth and occur in between two belts i.e. within 15 degree and 35 degree latitude across both northern and southern hemispheres respectively. As these are the low latitudes which are near to equator hence resulted with high solar intensities across whole area.

Deserts help the diverse communities of animals and plants to evolve their resistance towards extreme temperatures. For example grasslands desert are slightly cooler and more humid that it's nearby ecosystems. Most of the animals get their energy source in the form of plants but plants in desert do not give their fruit very reluctantly. Desert ecology contains dry and alkaline soil, which has low production and realistic patterns by carnivores and herbivores.

Deserts occur due to rain shadows or global wind patterns. Winds which are blowing from poles to equator are dry not only contains little moisture but also evaporate all forms of water if present. Rain shadows generally do occur because of the wind patterns and the wind passing through a mountain range. As air gets sucked up towards colder altitude; it shed some or all precipitation which is carries.

### 3. Deserts Structure and Function

Components which are mainly present in deserts are as follows.

#### 3.1. Abiotic Components

These components include the nutrients which are present in the environment and soil. The major feature of these components is scarcity of water and lack of organic matter.

#### 3.2. Biotic Components

The different kind of biotic components present in 3 different groups, which are as follows:

a. Producer Organisms

These organisms are generally bushes or shrubs, few trees and grasses. Surprisingly, deserts have many plant species which survives in this harsh environment. Most of them store water and other plants have seeds which remain dormant till a rain awakes them. Regardless, these types of plants find a way to protect them from the heating effect of sun and to get water through various sources.

b. Consumers:

These include different types of animals like insects and reptiles. Along with them some birds, rodent and different varieties of vertebrates are also present in deserts.

c. Desert Arachnids and Insects

There are various types of insects are present in the desert. One of the most common and dangerous is locust. It is a type of grasshopper. They use to travel from place to other places and destroying all the vegetation wherever they find. Locusts have the capability to destroy crops in a day.

Generally all insects living in desert are not bad. The yucca moth is an insect which is important to plant yucca, as it helps to carry pollens from stigma of a flower. The darkling beetle is made of hard and white wing case which reflects Sun's energy which allows them to look for food in the day light.

d. Desert Reptiles

They are most interesting creatures in the desert. They have tendency to withstand the harsh environment of desert as they have the capability to control body temperature. There are two kinds of reptiles which are present: lizards and snakes.

Much kind of rattlesnakes are present in the desert. Rattlesnakes use their noisy rattle as a kind of an alarm for the enemies. Rattlesnake with strike to the predator if they are not careful, rattlesnake will inject venom with their sharp fangs.

e. Camels: The Desert car

Camels come under mammal section. Camels help to cover long distances as without them; people would be facing great difficulty while crossing the terrain. Two types of camels

1. Bactrian
2. Dromedary

Dromedaries have just one hump whereas Bactrian has two humps respectively.

In India, Desert is found in Rajasthan which is known as Thar Desert.

